

Headwater Intermittent Streams Study: Collaboration Across the Nation

Ken Fritz

Ecologist

U.S. EPA Office of Research and Development (ORD), National Exposure Research Laboratory (NERL), Ecological Exposure Research Division (EERD), Ecosystems Research Branch (ERB)
(513) 569-7092

fritz.ken@epa.gov

Authors: Ken Fritz¹, Brent Johnson¹, David Walters¹, Joseph Flotemersch¹, Margaret Passmore², David McDonald³, James Kurtenbach⁴, Edward Hammer⁵, Gretchen Hayslip⁶, Lillian Herger⁶

¹U.S. EPA ORD/NERL/EERD/ERB

²U.S. EPA Region 3

³U.S. EPA Region 1

⁴U.S. EPA Region 2

⁵U.S. EPA Region 5

⁶U.S. EPA Region 10

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Headwater streams are the most abundant and widespread of our nation's surface waters, yet little guidance is available specific to these resources. Headwater streams lie at the terrestrial-aquatic interface, both spatially because of their narrow channels and landscape position and temporally because of their relatively young geological age and recent transition from terrestrial to aquatic habitats. In fact, many have physical characteristics of both aquatic and terrestrial habitats because of seasonal flowing and drying phases. Natural drying has a strong influence on biological communities and can confound the use of traditional stream assessment tools. As a result, headwater stream ecosystems are a challenging environment for addressing regulatory issues. Through the Regional Methods Program (research funding specifically designated for methodological needs of states, regions, and tribes), the ORD's National Exposure Research Laboratory in Cincinnati is developing methods for assessing headwater streams and identifying physical and biological indicators of hydrologic regime. The Headwater Intermittent Streams Study is sponsored by eight U.S. Environmental Protection Agency (U.S. EPA) regions (Regions 1, 2, 3, 4, 5, 8, 9, and 10). We conducted a pilot study in 2003–2004 in four forests near Cincinnati (in cooperation with the U.S. Forest Service, state of Kentucky, and The Nature Conservancy) to develop field protocols and hydrologic indicators. In 2004, we held field workshops to train regional and state biologists and expanded the study to include forests in five of the U.S. EPA regions (1, 2, 3, 5, and 10). The goal of this additional research is to assess the applicability of methods and indicators outside of the pilot study area. Collaboration between the ORD and the U.S. EPA regions is well suited for the widespread and variable nature of headwater stream ecosystems. This collaborative effort will produce scientifically sound protocols for assessing conditions for the majority of streams and stream miles in the United States.

Although this work was reviewed by the U.S. EPA and approved for publication, it may not necessarily reflect official Agency policy.

